Optimasi Asetilasi Dan Oksidasi Pada Tepung MOCAF Ditinjau Dari Sifat Ekspansi Dan Nisbah Amilosa-Amilopektin

Optimized Acetylation And Oxidation On MOCAF Depend As Reveale By Nature Of Expansion And Amylose-Amylopektin

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ABSTRACT

The aims of this research are to analyze modification of acetylated and oxidized modified cassava flour (MOCAF) in ratio of amylose : amylopectin, swelling power, solubility, and expansion properties. Besides,identification of functional groups of acetylated and oxidized MOCAF starch is performed by using FTIR spectrophotometer. Data were analyzed using acompletely randomized design comprised of one factor, which is the ratio between flour, MOCAF acetylated starch, MOCAF flour, and cassava flour. Acetylated and Oxidation process is optimized using Response Surface Analysis (RSM) method with 33 Central Composite Design (CCD) model. The results showed that amylose content and amylopectin optimization yielded 29.1597 ± 0.25% and 41.3271 ± 0.19%. The optimum result for expansion was 2.29 mL / g with 5% acetic acid concentration treatment, 2% hydrogen peroxide concentration, and acetylation time of 150 min. The optimum result for solubility was 23.67% (w / w) with treatment of 3.3% acetic acid concentration, 5% hydrogen peroxide concentration, and 90 minutes of acetylation time. The optimum result for swelling power was 17,11% (w / w) with 5% acetic acid concentration, 8% hydrogen peroxide concentration, and acetylation time 150 min. Each treatments of MOCAF gives significant difference of amylose and amylopectin contents.

keywords*: acetylation, amylose, amylopectin, MOCAF, oxidation*